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(71) Applicant

Dawson Engineering

Limited

Unit 6

Wootton Trading Estate

Newport Pagnell Road

Northampton

(72) Inventor

James Arthur Ford

(74) Agents

A A Thornton & Co

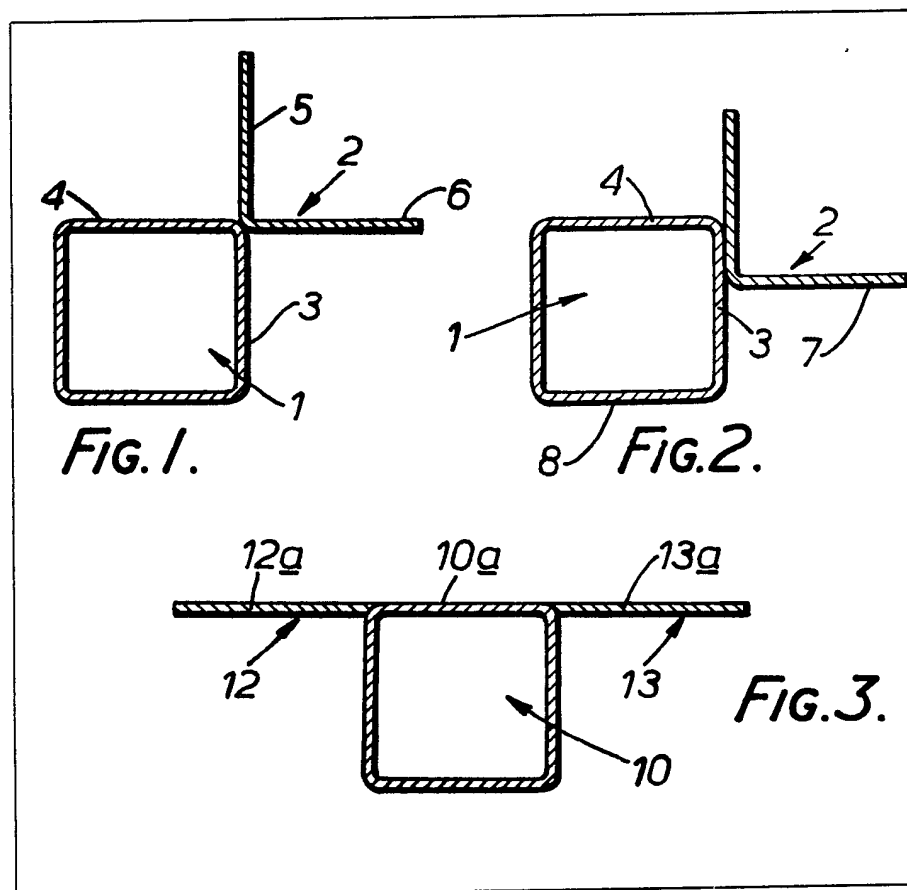
Northumberland House

303-306 High Holborn

London WC1V 7LE

(54) Metal cabinets

(57) The structural framework of a cabinet is fabricated from elongate elements at least some of which comprise a rectangular section metal tube 1 with an angle piece 2 (or a metal strip) welded along one edge of the tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube (or the strip lies parallel to one of the adjacent faces of the tube). The edge between the two portions of the angle piece may coincide with or be offset from the one edge of the tube. Faces such as face 7 of the angle piece provide lands, recessed from tube faces such as 8, to receive panels of the cabinet so that the faces 8 and the front surfaces of the panel may be flush.



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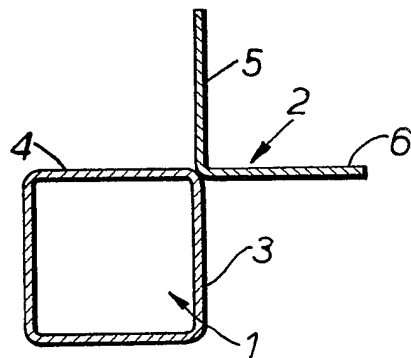


FIG. 1.

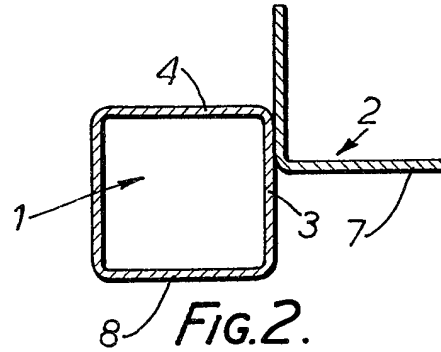


FIG. 2.

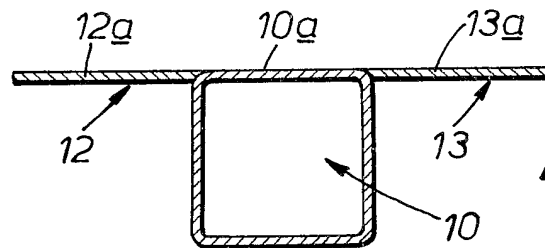


FIG. 3.

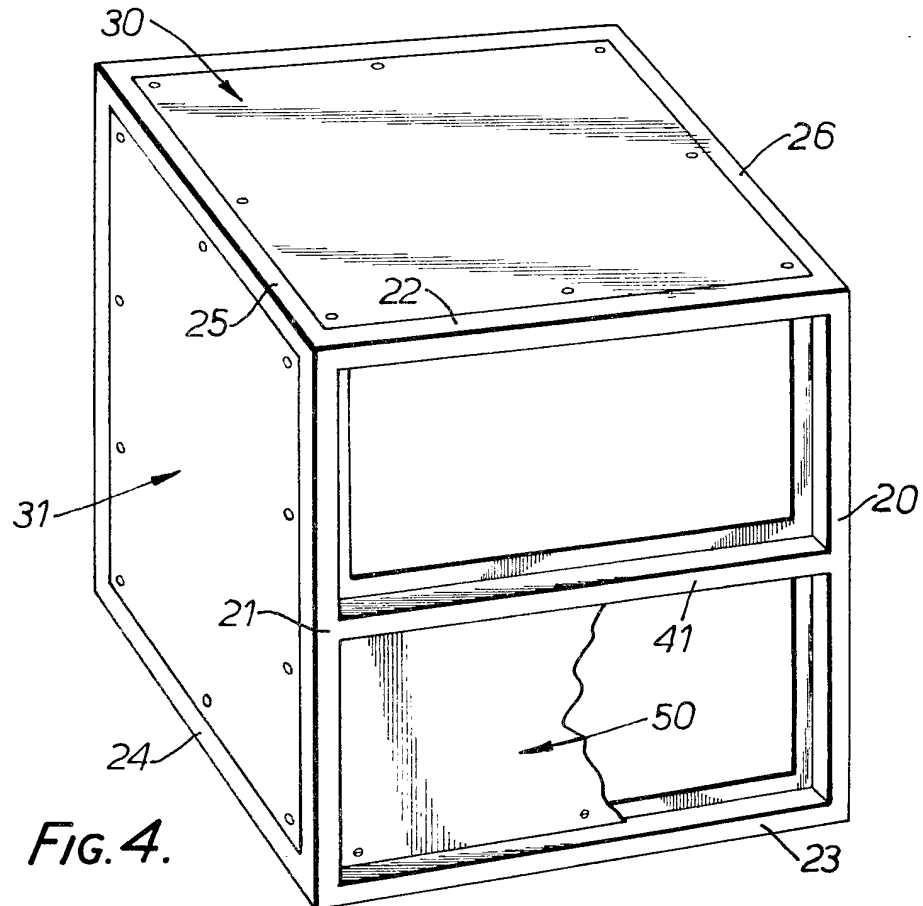


FIG. 4.

SPECIFICATION

Metal cabinets

5 This invention relates to metal cabinets and to elongate metal elements from which the structural framework of such cabinets may be fabricated.

10 Metal cabinets are made for a wide variety of uses, for example for housing electrical or electronic control equipment. It is often a requirement or advantage for some at least of the panels of the cabinet to be hinged or removable and a conventional form of construction comprises a rectangular structural framework, fabricated from elongate metal elements, to which the various panels, whether fixed or hinged or removable, are attached. It is usually desirable or necessary for the panels to be flush with or recessed relative to the faces of the structural framework, and in order to achieve this the elongate metal elements from which the framework is formed should provide appropriate recessed lands for attachment of the panels. Hitherto, the elongate metal elements have been fabricated from metal strip folded to a complex cross-section, or else fixed panels (e.g. side panels of the cabinet) of sheet material have been folded to provide an equivalent complex cross-section for attachment of adjacent panels (e.g. front panels of the cabinet). These forms of construction have been complex and relatively expensive.

35 One form of elongate metal element in accordance with this invention comprises a rectangular (preferably square) section metal tube and an angle piece welded along one edge of the metal tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube. Preferably the angle piece comprises a metal strip folded to a right angle along its length after it has been formed with apertures at intervals along its intended line of folding: this piece is then welded to the tube through the apertures and the fold-edge of the angle piece may coincide with or be offset from the one edge of the tube. Such elongate elements as thus provided are appropriate for fabricating the basic rectangular framework of a cabinet with the two portions of the angle piece providing respective recessed lands for panels of the cabinet.

55 Another form of elongate metal element in accordance with this invention comprises a rectangular (preferably square) section metal tube with a metal strip welded along one edge of the metal tube to lie parallel to one of the adjacent faces of the tube. A second metal strip may be welded along an adjacent edge of the metal tube so that the two metal strips both lie parallel to the tube face between those adjacent edges.

65 Also in accordance with this invention,

there is provided a cabinet comprising a structural framework fabricated of a plurality of elongate elements at least some of which comprise a rectangular section metal tube with a metal angle piece or a metal strip welded along one edge of the metal tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube or the metal strip lies parallel to one of the adjacent faces of the tube, the strip or angle piece portions forming lands for cabinet panels which are applied from the exterior of the cabinet framework.

Embodiments of this invention will now be described, by way of examples only, with reference to the accompanying drawings, in which:—

Figures 1 and 2 are sections through elongate metal element of one form;

85 *Figure 3* is a section through a second form of elongate metal element; and

Figure 4 is a perspective view, partly cut-away, of a cabinet having a structural framework constructed from elongate metal elements as shown in Figs. 1 and 3.

Figs. 1 and 2 each shows an elongate metal element comprising a square section steel tube 1 and a steel strip 2 which has been punched with apertures at intervals along its length, mid-way between its opposite edges, then folded to a right-angle along its middle, and finally welded through the apertures so as to secure to one edge of the steel tube 1, with its two portions lying parallel to the adjacent faces 3, 4 of the tube 1. In Fig. 1, the edge of strip 2, which edge has been formed by the folding coincides with the one edge of the tube 1, and because the outside edges of the tube 1, and the outside edge between the folded portions of the strip 2, are slightly rounded in section, the faces 5, 6 of the angled strip may be aligned substantially in the same planes as the respective faces 3, 4 of the tube. In Fig. 2, the fold-edge of strip 2 is displaced a selected amount from the one edge of tube 1, so that the face 7 of the strip is set back a desired amount from the face 8 of the tube 1. The apertures punched in the strip 2, for either Fig. 1 or Fig. 2, may be circular or slots elongated lengthwise of the strip. By way of example, the tube may be 1 inch square and the strip 2 inches wide.

Fig. 3 shows an elongate metal element comprising a square section steel tube 10 and steel strips 12, 13 welded along respective adjacent edges of the tube 10 so that the faces 12a, 13a of these strips are co-planar with the face 10a of the tube which lies between these edges. The strips may be spot-welded to the tube edges at intervals along their lengths. By way of example, the tube 10 may be 1 inch square and each strip 1 inch wide.

Fig. 4 shows one example of cabinet having a metal framework fabricated from elongate

elements as shown in Figs. 1 and 3. The front of the cabinet framework comprises four lengths 20-23 of the Fig. 1 element forming a frame and mitred and welded together at the corners, and the rear of the cabinet framework is similarly constructed. The basic framework is completed by four further lengths of the Fig. 1 element (3 such lengths 24-26 being shown) butt-jointed and welded between the front and rear frames of the cabinet. Top and side panels 30, 31 are shown, each being formed of sheet steel folded around its edges to provide a peripheral lip which rests on the lands provided by the four elements forming the top and side of the cabinet framework: these lips place the panels substantially flush with the top and side of the framework, as shown.

The front of the cabinet is arranged for two recessed panels, one above the other. Thus, a length 41 of the Fig. 3 element is butt-jointed and welded to the upright elements 20, 21 of the front frame, and its strips 12, 13 (Fig. 3) provide lands for the top and bottom edges, respectively, of the lower and upper front panels. The cabinet is shown with the upper front panel removed, but the lower panel comprises a flat steel sheet 50 resting flat on the lands provided by the elements 20, 21, 23 and 41. As shown, all panels are removably secured by screws fitted into the underlying lands, but other forms of attachment (e.g. hinging) are also envisaged.

Instead of elements being mitred at corners, appropriate corner pieces may be used, simply requiring all elements to be cut square to length and butt-jointed and welded to the corner pieces.

The particular cabinet of Fig. 4 has been shown as an example only and merely to exemplify the manner in which the elements of Figs. 1 and 3 may be used and to demonstrate the simplicity and advantages of using such elements. The element of Fig. 2 may be used for a cabinet (or parts of a cabinet) where a land 7 is required at a desired lesser offset from the front face 8 of the element.

In Fig. 3, instead of the two strips 12a, 13a, a single 3 inch wide strip may be applied face-to-face over face 10a of the tube and secured to the tube by welding so as to project from the two adjacent edges of the tube in like manner.

55 CLAIMS

1. A cabinet comprising a structural framework fabricated of a plurality of elongate elements at least some of which comprise a rectangular section metal tube with a metal angle piece or a metal strip welded along one edge of the metal tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube or the metal strip lies parallel to one of the adjacent faces of the tube, the strip or angle piece portions

forming lands for cabinet panels which are applied from the exterior of the cabinet framework.

2. An elongate element for a structural framework of a cabinet, comprising a rectangular section metal tube and a metal angle piece welded along one edge of the metal tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube.

3. An element as claimed in claim 2, in which the edge of the angle piece between its two portions coincides with said one edge of the tube.

4. An element as claimed in claim 2, in which, owing to the outside said edge of the angle piece and the outside one edges of the tube being rounded, the inward faces of the angle piece are substantially co-planar with the respective outer adjacent faces of the tube.

5. An element as claimed in claim 2, in which the edge of the angle piece between its two portions is offset from said one edge of the tube, along one of said adjacent faces of the tube.

6. An element as claimed in any one of claims 2 to 5, in which the angle piece is welded to the tube through apertures spaced apart along the length of the angle piece and formed through its said edge.

7. An element as claimed in any preceding claim, in which the angle piece comprises a metal strip folded lengthwise to provide its said edge.

8. An elongate element for a structural framework of a cabinet, comprising a rectangular section metal tube with a metal strip welded along one edge of the metal tube so as to lie parallel to one of the adjacent faces of the tube.

9. An element as claimed in claim 8, further comprising a second metal strip welded along an adjacent edge of the metal tube so that the two metal strips both lie parallel to the tube face between those adjacent edges.

10. An elongate element for a structural framework of a cabinet, substantially as herein described with reference to Fig. 1, 2 or 3 of the accompanying drawings.

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DAWSEL ENG LTD	N/A

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ABSTRACT:

The structural framework of a cabinet is fabricated from elongate elements at least some of which comprise a rectangular section metal tube 1 with an angle piece 2 (or a metal strip) welded along one edge of the tube so that the two portions of the angle piece lie substantially parallel to adjacent faces of the tube (or the strip lies parallel to one of the adjacent faces of the tube). The edge between the two portions of the angle piece may coincide with or be offset from the one

edge of the tube. Faces such as face 7 of the angle piece provide lands, recessed from tube faces such as 8, to receive panels of the cabinet so that the faces 8 and the front surfaces of the panel may be flush. 